CLAIMS:

1. An apparatus assembly for separating grades of food-stuff seeds from a food-stuff seed mixture of premium grade food-stuff seeds and unwanted inferior grade food-stuff seeds, and comprising:

an endless belt conveyor subassembly having an endless belt component, and having a least-elevated end, a most-elevated end, longitudinally upward tilt from said least-elevated end to said most-elevated end, a least elevated longitudinal edge, a most-elevated longitudinal edge spaced apart from said least elevated longitudinal edge, and transversely downward tilt from said most-elevated longitudinal edge to said least-elevated longitudinal edge;

a feed hopper supplying premium grade and inferior grade food-stuff seeds to said endless belt conveyor subassembly least-elevated end;

a first food-stuff seed product discharge ramp positioned adjacent said endless belt conveyor subassembly most-elevated end;

a second food-stuff seed product discharge ramp positioned adjacent said endless belt conveyor subassembly least elevated longitudinal edge;

a longitudinal drive mechanism imparting longitudinal motion to said conveyor endless belt component in a direction from said endless belt conveyor subassembly least-elevated end to said endless belt conveyor subassembly most elevated end; and

an orbital drive mechanism superimposing orbital motion upon the longitudinal motion of said endless belt conveyor subassembly endless belt component,

whereby premium grade food-stuff seeds are directed to one of said food-stuff seed discharge ramps, and unwanted grade food-stuff seeds are directed to the other of said food-stuff seed product

discharge ramps when said longitudinal and orbital drive mechanisms are activated.

2. The invention defined by claim 1, and wherein said feed hopper supplies a mixture of premium grade soy beans and unwanted grade soy beans to said endless belt conveyor subassembly endless belt component, said premium grade soy beans being directed to said second food-stuff seed discharge ramp and said unwanted grade soy beans being directed to said first food-stuff seed discharge ramp when said longitudinal and orbital drive mechanisms are activated.

3. The invention defined by claim 1, and wherein said feed hopper supplies a mixture of black beans and unwanted soy beans to said endless belt conveyor subassembly endless belt component, said soy beans being directed to said second food-stuff seed discharge ramp and said black beans being directed to said first food-stuff seed discharge ramp when said longitudinal and orbital drive mechanisms are activated.

4. The invention defined by claim 1, and wherein said feed hopper supplies a mixture of premium grade garbanzo beans and unwanted grade garbanzo beans to said endless belt conveyor subassembly endless belt component, said premium grade garbanzo beans being directed to said second food-stuff seed discharge ramp and said unwanted grade garbanzo beans being directed to said first food-stuff seed discharge ramp when said longitudinal and orbital drive mechanisms are activated.

5. In an endless belt conveyor apparatus for separating inferior grade food-stuff seeds out of a food-stuff seed mixture having premium grade food-stuff seeds and unwanted inferior grade food-stuff seeds, the improvement comprising:

an upper longitudinal frame member supporting the endless belt conveyor that separates the food-stuff seed mixture into a premium grade food-stuff seed constituent and an unwanted inferior grade food-stuff seed constituent;

a lower longitudinal frame member pivotally supporting said upper longitudinal frame member;

a first tilt adjustment mechanism that controllably pivots said upper longitudinal frame member relative to said lower longitudinal frame member to change the longitudinal tilt of said upper longitudinal frame member and the endless belt conveyor supported thereon;

a first drive mechanism that imparts longitudinal motion to an endless belt component of the endless belt conveyor; and

a second drive mechanism that imparts orbital motion to said lower longitudinal frame member and to said upper longitudinal frame member and the conveyor endless belt when activated.

6. The invention defined by claim 5, and wherein said lower longitudinal frame member is supported by a multiplicity of flexible cable segments and thereby made free for limited lateral orbital motion in response to activation of said second drive mechanism.

7. The invention defined by claim 5, and wherein said lower longitudinal frame member supported upon a multiplicity of extended coil springs and thereby made free for limited lateral orbital motion in response to activation of said second drive mechanism.

8. The invention defined by claim 6, and further comprised of a second tilt adjustment mechanism, said second tilt adjustment mechanism being interconnected to the endless belt conveyor and to said upper longitudinal frame member, and said second tilt adjustment mechanism, when activated, causing a change to the transverse tilt of the endless belt conveyor relative to said upper longitudinal frame member.

9. In a method of separating inferior grade food-stuff seeds from a food-stuff seed mixture having premium grade food-stuff seeds and unwanted grade food-stuff seeds the steps of:

a. Flowing the mixture onto a moving endless conveyor belt having longitudinal belt motion, having a longitudinal upward tilt in the direction of said longitudinal belt motion, and having transverse downward tilt at right angles to the direction of said longitudinal belt motion;

b. Superimposing an orbital motion on said moving endless conveyor belt that is in addition to said longitudinal belt motion;

c. Discharging the premium grade seeds of the food-stuff seed mixture from upon said endless conveyor belt into one or more collection zones positioned at the edge of said moving endless conveyor belt at its lowermost regions of transverse downward tilt; and

d. Discharging the unwanted grade seeds of the food-stuff seed mixture from upon said endless conveyor belt into one or more collection zones positioned at the end of said moving endless conveyor belt at its uppermost regions of longitudinal upward tilt.

10. The method invention defined by claim 9, and wherein said food-stuff seed mixture is a mixture of spherically-imperfect soy bean seeds and spherically near-perfect "premium" soy bean seeds.

11. The method invention defined by claim 9, and wherein said endless conveyor belt longitudinal upward tilt is approximately 4¼°.

12. The method invention defined by claim 9, and wherein said endless conveyor belt transverse downward tilt is approximately 3½°.

13. The method invention defined by claim 9, and wherein said superimposed orbital motion is developed with an average diameter of approximately 3½ inches and a rotational speed of approximately 70 to 80 revolutions per minute.

14. The method invention defined by claim 9, and wherein said food-stuff seed mixture is a mixture of soy bean seeds and black bean seeds, and further wherein said soy bean seeds are discharged from said endless conveyor belt from along said lowermost regions of transverse tilt and said black bean seeds are discharged from said endless conveyor belt from along said uppermost regions of its longitudinal upward tilt.